

WHAT IS CLAIMED IS:

1. An apparatus for closing an arterial access opening in an arterial wall while permitting post operative blood flow through the artery, which comprises:

5 a housing having proximal and distal ends, and defining a longitudinal axis;

first and second arterial tissue everting members mounted adjacent the distal end of the housing, the first and second arterial tissue everting members being dimensioned for at least partially positioning within the arterial access opening in the arterial wall, the first and second arterial tissue everting members being  
10 deployable in at least a radial outward direction relative to the longitudinal axis of the housing to engage respective opposed arterial tissue portions on opposed sides of the opening and move the tissue arterial portions to an everted condition thereof;

first and second jaw members mounted adjacent the first and second tissue engaging members, the first and second jaw members adapted for relative movement between an open position to facilitate positioning about the arterial  
15 tissue portions in the everted condition and a closed position to at least partially draw the arterial tissue portions together to an at least partial approximated condition; and

an electrode associated with at least one of the first and second jaw members and arranged to contact the respective arterial tissue portions, the  
20 electrode being adapted to be connected to a radiofrequency energy source whereby energy is transmitted through the electrode to thermally fuse the arterial tissue positions between the first and second jaw members to substantially close the arterial access opening.

2. The apparatus according to claim 1 wherein an electrode is associated with each of the first and second jaw members.

3. The apparatus according to claim 2 wherein each electrode is configured as a bipolar electrode.

5 4. The apparatus according to claim 1 wherein each arterial tissue everting members includes a distal memory portion comprising a shape member material, the distal memory portion being adapted to assume a normal unstressed condition upon deployment to engage and move the arterial tissue portions to the everted condition.

10 5. The apparatus according to claim 5 wherein the normal unstressed condition of each arterial tissue everting member corresponds to a general hook-shaped configuration of the tissue engaging member.

15 6. The apparatus according to claim 5 wherein the distal memory portions of the arterial tissue everting members define general hook-shaped configurations in diametrical opposed relation and extending in radial opposite directions.

7. The apparatus according to claim 6 including a manually operable deployment member operatively connected to the arterial tissue everting members, and being movable to deploy the tissue everting members.

8. The apparatus according to claim 1 including an actuator operatively connected to the first and second jaw members, the actuator movable to cause corresponding movement of the first and second jaw members between the open and closed positions.

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9. The apparatus according to claim 8 including an elongated shaft at least partially disposed within the housing, the elongated shaft having camming structure which cooperates with corresponding camming structure of the first and second jaw members to move the jaw members between the open and closed positions.